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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 944,276	08 31 2001	Lawrence Jacobowitz	FIS920010146US1 (14577)	1880

7590 03 10 2003

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EXAMINER

LEE, PATRICK J

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 03/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/944,276

Applicant(s)

JACOBOWITZ ET AL.

Examiner

Patrick J. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 31 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1,2 and 4-20 is/are rejected.
- 7) ☐ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 31 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description:

For figure 2(a), label "55" is not explained.

For figure 7, label "50" is not explained.

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

On line 19 of page 4, "3(b)" should read "3(c)".

On line 13 of page 8, "15" should read "14".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claim 9 recites the limitation "said cross-product signal" in claim 7. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-2, 4, 6-7, 14-16, & 19-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Munks et al 6,289,028.

With respect to claims 1-2, 6-7, 14-15, & 19-20, Munks et al teach a method and apparatus for the monitoring and control of the wavelength emitted by a laser (12), which is inherently capable of providing a spectrum function with a set point center wavelength. The apparatus also includes optical filter (32), which is capable of producing a spectral filter function (100), and a control circuit consisting of detector (40), error circuit (48), dither modulator (350), phase sensitive demodulator (370), and laser wavelength control (24). The control circuit is capable of tuning the wavelength of the laser radiation. The dither modulator (350) is capable of applying a dither modulating frequency to the laser (12), while phase sensitive modulator (370) and PIN detector (40) (see column 9, lines 35-38) are capable of converting a portion of the dither modulated optical signal into an electric feedback signal. Error circuit (48) is capable of continuously comparing the feedback signal with a dither modulator signal to generate

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an error signal (22) that goes to laser wavelength controller (24), which controls the wavelength of beam (14) to reduce the error signal (see column 6, lines 7-13).

With respect to claims 4 & 16, laser (12) generates a laser signal, while laser wavelength controller (24) sends signals to the laser (12) to adjust the wavelength of laser emitted based on the error signal (22) received from the error circuit (48).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 5, 8-13, & 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Munks et al 6,289,028.

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With respect to claims 5 & 17, the use of a look-up table is known and would have been obvious in order to accurately adjust the output wavelength of the laser and in addition improve the performance of the apparatus.

With respect to claim 8, Munks et al teach the phase sensitive modulator (370) taking the dither modulated signal from dither modulator (350) and converted feedback signal from detector (40) to correctly orient the error circuit (48), but does not generate a cross-product signal representing a sum and a difference at dither frequencies. However, such is known and would have been obvious to one of ordinary skill, as doing so would allow for precise adjustment of the laser (12) to reduce the error signal.

With respect to claims 9-10, the use of a low-pass filter device, integrator circuit, and digitizer device is known and would have been obvious in order to appropriately use the generated cross-product signal in order to generate an accurate error signal.

With respect to claims 11-12, the apparatus taught by Munks et al has only a single detector, filter, and laser. However, the invention is intended to be applied for a Dense Wavelength Division Multiplexing (DWDM) system (see column 1, lines 20-37). It is known and would have been obvious to one of ordinary skill to make the necessary adjustments to integrate a plurality of generators, filters, and detectors into a single system in order to be able to increase bandwidth in handling the large amounts of data involved in a communication system.

With respect to claim 13, the use of a gain equalization function is known and would have been obvious to one of ordinary skill as it would improve the performance as it would allow for selective adjustment of the lasers.

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Allowable Subject Matter

10. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: With respect to claim 3, the fact that the center wavelengths are aligned when the frequency characteristic of the feedback error signal is two times of the dither modulation frequency is not taught or suggested by Munks et al.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dumphy et al 5,401,956 teaches a system that adjusts the laser output.

Watterson et al 6,526,079 teaches an optical wavelength reference device.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Lee whose telephone number is (703) 305-3871. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (703) 308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-9558 for regular communications and (703) 306-5511 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Patrick J. Lee
Examiner
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PJL

March 3, 2003


DAVID PORTA
SUPERVISORY PATENT EXAMINER
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